Leak Prevention

# Tanks Down East

*by W. David McCaskill*

*David McCaskill is an Environmental Engineer with the Maine Department of Environmental Protection.* ***Tanks Down East*** *is a regular feature of* LUSTLine. *David can be reached at* **David.Mccaskill@state.me.us**. *As always, we welcome your comments.*

## There Ought to be a Law !

### Maine's New UST Siting and Inspection Laws

For the past couple of years I've been pontificating on the issue of siting and proper operation of UST facilities. (See "Convenience Is Nice, But UST Systems Aren't Potato Chips, " *LUSTLine* # 32 and "The Tank That Never Leaked, Isn't it High Time We Made Sure USTs Don't End Up Where They Don't Belong", *LUSTLine* #35.) There are endless examples nationwide of releases that have resulted from owner/operator inattention to their UST systems coupled with an apparent lack of knowledge on how to use the release prevention equipment that they've purchased. Many assume that compliance can be achieved conveniently through the purchase of black box leak detection systems. Active management of the thousands of gallons of toxic and flammable liquids located at their businesses is not the preferred option.

It would be nice to think that some day soon we'll see the successful marriage of diligent tank owners and trouble-free tank systems. In the meantime, if we have to live with our compliance conundrum, then at least there ought to be a law to reduce the risk of releases in and around sensitive groundwater resource areas.

I mean look at the picture on page 18. Is that right? Should the homeowners (assuming they were there first) have to worry about a high-risk groundwater contamination source located across the street from their home and water source?

Well, I am happy to report that in Maine we finally have an UST siting law, PL 2001-302, An Act to Protect Sensitive Geologic Areas from Oil Contamination, that addresses this issue. It took public outcry, political fortitude (a lot of staff time), and, unfortunately, a number of large releases to make it all happen, but it did. The law consists of two parts: a provision to protect existing water supplies (i.e., public and private wells) and another that calls for the development of regulations to protect future water supplies (i.e., sand and gravel aquifers).

It has always been clear to staff at the Maine Department of Environmental Protection (DEP) that there are places where there should absolutely not be any gas stations or UST bulk plants. This motherhood and apple pie concept became more apparent to our legislative committee this session (especially when they heard from a few mothers!).

One other UST-related thing our legislature did during this session was to pass a law requiring owners and operators of existing UST facilities to obtain certification of compliance with our current requirement for annual facility inspections. More about that later.

#### What Are We Protecting?

Our new siting law protects public and private water supplies and sand and gravel aquifers. Under the federal Safe Drinking Water Act (SDWA), a public drinking water supply is any well or other source of water that furnishes water to the public for human consumption for at least 15 connections, regularly serves an average of at least 25 individuals daily at least 60 days out of the year, or supplies bottled water for sale.

There are three types of public drinking water supplies: community (e.g., municipal water districts, mobile home parks, nursing homes), non-community transit (e.g., motels, restaurants, campgrounds), and non-community non-transit (e.g., schools and business with 25 employees or more).

One of the requirements of the 1996 SDWA Amendments is for water suppliers to delineate (map) the area that contributes recharge water to their well. These areas are referred to as source water protection areas (SWPAs). In this state, the Department of Human Services has mapped these areas using a formula based either on usage or actual pump tests supplied by the water supplier.

As for the sand and gravel aquifers, the Maine Geological Survey has mapped the significant sand and gravel aquifers in the state using a combination of aerial surveys, well pump test data, and field work. These aquifer maps delineate areas with less than 50-gallons per minute (gpm) yields and areas with more than 50-gpm yields. The determination of the aquifers yielding greater than 50 gpm is based primarily on well pump test data of existing private or community drinking water supplies.

#### The UST Siting Law

The new law prohibits, after September 30, 2001, the siting of new UST

■ *continued on page 18*

## ■ Tanks Down East

*continued from page 17*

facilities within the mapped source water protection area or within 1,000 feet (which ever is greater) of a community water supply or school well, or within 300 feet of a private well. A variance to the prohibition will only be granted if the applicant proves that there is no hydrogeological connection between the UST system and the well(s).

Protection of community water supply wells is fairly straightforward; schools are included because kids not only spend a lot of time at school but are also a more contaminant-sensitive population. The most powerful of these prohibitions, however, is the set back provision for private drinking water wells. Replacing private wells that have been contaminated with petroleum has been the bread and butter of the remediation work in our UST program.

A few exceptions are identified in the law. These include replacing or expanding an existing UST facility, converting tanks at an existing facility from aboveground storage tanks to USTs, tanks that are used solely for on-site heating, and facilities where the well is located on the same property as the tanks and serves only the users of the property (i.e., you can mess your own nest, but we won't pay for a replacement water supply).

As for the non-community non-transit (excluding school wells) and non-community transit wells, any proposed facilities sited within the mapped SWPA or 1,000 feet of these wells may receive a variance based on extraordinary engineering and monitoring measures proposed by the applicant. Such measures must exceed regulatory requirements and effectively minimize a release.

What kind of measures are these you ask? Some that we will consider can be found in Marcel Moreau's article, "Plugging the Holes in Our UST Systems," in *LUSTLine* #37. Quite frankly, some of these measures, such as dispenser sumps with monitors and 15- to 25-gallon capacity spill buckets, should be requirements for all tanks regardless of location, and we may be considering such requirements at a later date.


### The Rulemaking Part

The second part of the law requires that the DEP develop rules for the siting of USTs over mapped sand and gravel aquifers. The rules are to include variances for certain circumstances. DEP scheduled two stakeholders meeting to solicit input prior to the formal rulemaking process. The stakeholders include industry and business representatives, as well as town officials, environmental groups, consultants, other state agencies (i.e., the Drinking Water Program and Department of Transportation), water utilities, and tank installers.

Input from the first stakeholders meeting reflected our thinking that perhaps there should be a three-tiered model for the siting of USTs over mapped sand and gravel aquifers, based on their potential as a future public drinking water supplies. These tiers could be set up in the following manner:

- No additional requirements for UST siting over areas of the aquifer that have existing contamination or are already heavily developed,
- Additional engineering and monitoring measures to prevent discharges for USTs sited in aquifers capable of yielding less than 50 gpm, and
- An all out UST prohibition in areas of the aquifer that are capable of yielding more than 50 gpm—aquifers or portions of aquifers of high potential as a water supply.

### The Inspection Law

The other UST law that passed this legislative session requires that tank owner/operators obtain certification of compliance with our annual facility inspection requirement. Since 1991, all owners and operators of UST facilities have been required to have their leak detection, spill and overfill prevention, and corrosion protection checked for proper operation on an annual basis by a certified tank installer or other qualified persons. For the past six years, DEP has offered training and issued annual reminders concerning this requirement.

Last year, we undertook a study to evaluate the compliance rates with our annual equipment inspections. Using a randomly selected 10 percent sample (262) of active oil UST facilities, the study found that more than 25 percent of the facilities had not had the required annual equipment inspections. Of those that had the inspections, 29 percent had problems with equipment. The most common problems found were with spill and overfill prevention equipment, tank interstitial probes, and line leak detectors for pressurized piping systems. The real kicker is that of those facilities with problems, 35 percent of the time the owners failed to have the problems corrected!

The new law will require owner/operators to submit a certificate to DEP, signed by a certified installer or inspector, stating that the leak detection, spill and overfill prevention systems, and stage I vapor recovery systems have been inspected and that any deficiencies discovered during the inspections have been corrected. The first certificate is due by July 1, 2003, and certification is required annually thereafter.

The law also gives DEP additional enforcement powers to require the owner/operator to cease deliveries of oil until the inspection is completed and/or deficiencies are corrected.

Finally, there is a prohibition on delivery of oil to nonconforming (bare steel) tanks after May 1, 2002. We hope that this will help provide motivation for the removal of those last 300 (more or less) remaining bare steel home heating oil USTs.

## Fear and Loathing...

They say never wish too hard for what you want because it may come true. DEP tank staff have dreamed of these tools, but now comes the heavy lifting to implement them. You fellow regulators are probably reading this and conjuring up in your minds some of the devilish details that await us.

With respect to the siting bill, we have a little less than a year to develop regulations for the siting of UST facilities over mapped sand and gravel aquifers, but the prohibitions against siting close to public and private wells go into effect this October. We will need to develop guidance on what we mean by engineering and monitoring measures and what we will require for proof of no hydrogeological connection between UST facilities and drinking water wells.

My worst fear is about what will happen when that property owner who wants to build his American dream, small business, mom and pop variety store with "gas pumps" out front (to attract buyers of beer, cigarettes, ice, and picnic supplies) comes in for a variance. When told that he has to hire a hydrogeologist to determine whether there is a hydrogeological connection between his site and the neighbor's drinking water well 200 feet away, what's he is going to say? "You mean to tell me that you can't tell me that? You mean I have to gamble $10,000 for you to tell me whether or not I can sell gas on my land?"

Hopefully education and outreach to industry, tank installers, municipal code enforcement officers, and banks will provide buffer against such a scenario. We have some powerful tools now in our quiver and a lot of work ahead, but in the end, this is bound to help prevent future nightmare cleanups.

As for the inspection certification requirement, well, it builds on an existing requirement. So for us, it is a matter of developing a database and an enforcement plan and then educating tank owners that the requirements become effective in two years. Another one of my fears on this one is that the 25+ percent of owner/operators who have never had their systems checked will wait until the last minute to fix their problems. ■